

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 January 2004 (15.01.2004)

PCT

(10) International Publication Number
WO-2004/006225 A1

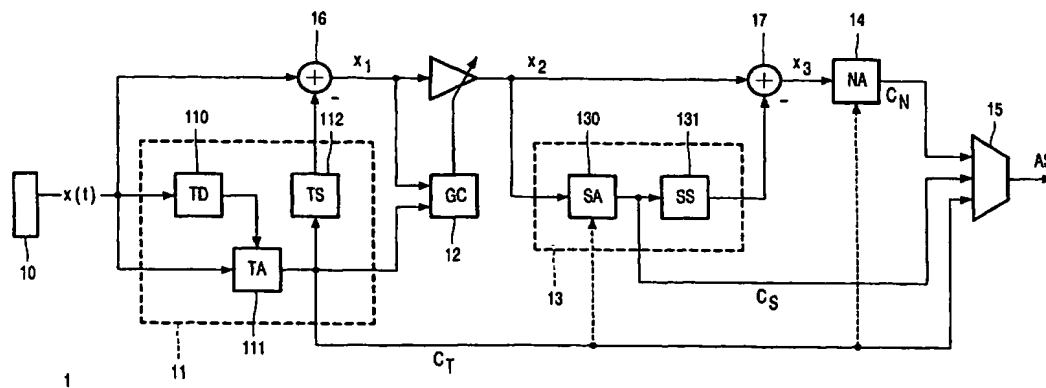
- (51) International Patent Classification⁷: **G10L 19/02**
- (21) International Application Number:
PCT/IB2003/002746
- (22) International Filing Date: 18 June 2003 (18.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
02077727.2 8 July 2002 (08.07.2002) EP
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SINUSOIDAL AUDIO CODING



(57) Abstract: Coding (1) an audio signal (x) comprises providing a respective set of sampled signal values for each of a plurality of sequential segments. The sampled signal values are analysed (130) to generate one or more sinusoidal components for each of the plurality of sequential segments. The sinusoidal components are linked across a plurality of sequential segments. Sinusoidal codes (CS) comprise tracks of linked sinusoidal components for each of the plurality of sequential segments. Each track comprises a frequency and amplitude for a sinusoidal component in a starting segment of a track whereas selected tracks include an indicator that no phase is included for said starting segment.

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB 03/02746

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G10L19/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G10L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, COMPENDEX, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 79519 A (KONINKL PHILIPS ELECTRONICS NV) 28 December 2000 (2000-12-28) cited in the application page 2, line 6 - line 20 page 4, line 16 - line 30 ---	1,2,5-15
X	LEVINE S N ET AL: "A SWITCHED PARAMETRIC & TRANSFORM AUDIO CODER" 1999 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING. PHOENIX, AZ, MARCH 15 - 19, 1999, IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING (ICASSP), NEW YORK, NY: IEEE, US, vol. 2, 15 March 1999 (1999-03-15), pages 985-988, XP000900288 ISBN: 0-7803-5042-1 page 986, column 2, paragraph 3.1 --- -/--	1

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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- *&* document member of the same patent family

Date of the actual completion of the international search

14 October 2003

Date of mailing of the international search report

27/10/2003

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 03/02746

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>MCAULAY R J, QUATIERI T F: "Chapter 4: Sinusoidal Coding" IN: SPEECH CODING AND SYNTHESIS; KLEIJN W B, PALIWAL K, EDS.; ELSEVIER, 1995, XP008023157 page 168, paragraph 6.5 -----</p>	

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB 03/02746

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 0079519	A	28-12-2000	CN	1320257 T	31-10-2001
			DE	60001904 D1	08-05-2003
			WO	0079519 A1	28-12-2000
			EP	1105869 A1	13-06-2001
			JP	2003502703 T	21-01-2003
